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ABSTRACT

Awareness of the three analytical perspectives on educational innovation leads to better understanding of educational change processes and better innovation strategies and policies. The three perspectives--technological, political, and cultural--are "screens" of facts, values, and presuppositions through which analysts view innovation. From the technological perspective innovation is conceived of as a mechanistic process based on rational analysis and empirical research. From the political perspective innovation is seen as a set of conflicts and compromises among groups or factions. From the cultural perspective innovation is viewed as interaction among cultures or subcultures, and events are explained in terms of cultural relativism, evolution, or multiculturalism. Analyses based on these three perspectives differ sharply in their fundamental assumptions about change, in their underlying images of change processes, in their values and ethics, and hence in their focal points for study. The technological perspective focuses on the innovation itself, while the political focuses on the innovation in its power context and the cultural focuses on all aspects of the context. The three perspectives can be combined, however, to explain events (such as resistance to modernization) for which a single perspective is inadequate, permitting formation of more comprehensive and effective innovation policies. (RW)

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THREE PERSPECTIVES ON INNOVATION--
THE TECHNOLOGICAL, THE POLITICAL, AND THE CULTURAL

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The Nature of a Perspective
The Perspectives
An Expansion of the Cultural Perspective
A Comparison of the Perspectives
Relationships Among the Perspectives
The Perspectives and Modernization
Implications for Research and Policy

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The Nature of a Perspective

The central aim of this paper "is to make explicit the status of our understanding regarding knowledge utilization processes relative to the improvement of educational practice." This analysis entails a somewhat different enconception of the 'status of our knowledge" than is typical. Our understanding of knowledge utilization processes is conceived not so much as a set of facts, findings, or generalizations but rather as distinct perspectives which combine facts, values, and presuppositions into a complex screen through which knowledge utilization is seen.

Whichever screen one adopts leads one to focus on certain features of knowledge utilization events, to advocate certain policies rather than others, and to conduct certain types of research and evaluation studies. Through a particular screen one sees certain events but may see different ones through a different screen. Theoretically, there are no limits to the number of perspectives that may exist, but, in fact, three perspectives--the technological, the political, and the cultural--seem to account for the vast majority of studies that have been conducted.

This conception of knowledge may be put another way. Consider the vast number of studies conducted on knowledge utilization processes. These are experiences to be assimilated and understood. The usual way to assimilate these studies is to sort through them, to classify them, to draw generalizations, and thus to ascertain what they mean. This is a taxonomic and generalizing procedure, and certainly a reasonable one. This is what most reviews of research do.

Another way to assimilate the studies or points of experience is to postulate certain principles or assumptions or axioms that would "account for" the studies. That is, what axioms held by researchers would account for the studies that they have been generating? For purposes of explanation, one would want to

arrive at the smallest possible number. In this case, three basic perspectives (or combinations of these) seem to account for the vast number of studies.

The approach here is similar to that of Allison (1971) who characterized three conceptual "models" through which professional analysts, as well as laymen, thought about decisions in foreign and military policy. Allison's three models were the "rational actor," the "organizational process," and the "governmental politics" models. An event like the Cuban missile crisis could be understood in terms of each of the three models, but the interpretation of events varied depending upon the model employed.

Decisions taken during the Cuban missile crisis could be seen as the result of rational choice, as the output of routinized standard operating procedures within the bureaucracy, or as the resultant of political forces within the government. Each decision-making model explained aspects of events not explained by the other models. Generally, Allison contended, these were the models available to analysts for interpreting all foreign affairs. The interpretation was very much shaped by the decision-making model employed.

Schon (1979) has contended that social problems are defined by underlying "deep" metaphors that account for why some aspects of a situation are considered important and others are not. These metaphors shape what people think about the problem situation. People "name" and "frame" aspects of the problem by reference to the tacit image. Certain elements in a situation are selectively portrayed.

For example, there are two quite different views of the urban slum. One view sees the slum as an unhealthy area that has become "blighted." Images of disease inform this vision. Concepts like "health," "decay" and "renewal" are employed. In the second vision, the slum is seen as a natural community that provides important services for its residents. Concepts like "home," "informal networks," and "dislocation" are employed.

The researchers see the slum either as blighted or as a natural community. In seeing A as B, the evaluation in B is carried over to A. By selecting certain elements and organizing them coherently, these viewpoints explain what is wrong in a social situation and suggest transformations. The underlying image is often revealed by the language employed.

Each of the three perspectives in innovation has a different underlying image upon which it draws to interpret events in the innovation process. Underlying the technological perspective is the image of production. Concepts like input-output, flow diagrams, and specification of tasks are commonly employed. Innovation is conceived as a relatively mechanistic process. The social relationships are based on technological necessity. The concern is economic and the primary value that of efficiency.

Underlying the political perspective is the image of negotiation. Concepts such as power, authority, and competing interests are employed. Social relationships are conceived as voluntary and as resting on contractual arrangements. Individual and group interests are conceived as often in conflict. Distribution of resources in a legitimate and acceptable manner is important. The concern is political, and a primary value is the legitimacy of the authority system.

Underlying the cultural perspective is the image of community. People are bound to one another through shared meanings resting on shared values. Social relationships are traditional. Integrity of the culture is a primary value. Within a given culture, conformity to the culture's values may be important. Across cultures, tolerance of other culture's values is critical if cultural integrity is to be maintained. From the multicultural perspective, autonomy of separate cultures is paramount. Although relationships within a culture may be binding and obligatory, relationships across cultures are relativistic.

These three perspectives act as interpretive frameworks for understanding the innovation process. By so framing the social phenomena, they serve as a guide to what is important and as a guide to action. However, people operating within the same framework do not necessarily agree with one another. Two people operating within the political perspective may agree in analyzing the innovation process in terms of competing interest groups. But one analyst may side with the interests represented by the federal government and the other with the interests represented by the local government. They agree on the relevant concepts and on the issues but take different sides of the issues. Both, however, take the political perspective.

What these different frameworks do is to define the range of possible arguments that one might advance for a course of action. In research they set limits as to what is considered useful inquiry. For example, if one adopts the political perspective, arguments for and against a policy or course of action will naturally be phrased in terms of individual or group interest. Inquiry will be directed at identifying whose interests are at stake and how they shall be served. Arguments will be conducted within this conceptual framework. Although it will be possible to take significantly different value positions on issues, there will be only a limited number of value positions available to assume, and only certain arguments will carry any weight within the framework.

Such frameworks or perspectives may be conceived as "moral" or "action" paradigms. They build in valuation by restricting the range of value positions which can be defensively adopted. In a sense, they distribute the burdens of argument in certain ways (Bernstein, 1978). The inherent valuation of the framework may be overridden only with considerable difficulty. For example, political arguments about competing interests may be overridden by

other concerns, such as by moral considerations, but the overriding arguments must work against the slant of the framework.

These action perspectives result from an acceptance of normative constraints about what is rational and acceptable. They limit the very language and concepts employed in the discussions and thereby give a certain value slant. The perspectives define the limits of rational choice itself. It is through these perspectives that choices are justified and legitimized. In this sense, people are dominated by the perspectives or frameworks that they adopt. Furthermore, these perspectives operate implicitly.

These "paradigms" are not the same as those attributed by Kuhn to physical science. Kuhn (1970) saw scientific fields of endeavor as having a set of beliefs, values, and techniques that are shared within a field of scientific inquiry. Eventually the dominant paradigm is challenged by anomolous facts that cannot be explained by the old paradigm. A new paradigm emerges which can explain these new facts. However, the physical world itself remains constant.

The action perspectives, by contrast, "describe" or operate in a social and political world that is itself changing. The shift from a technological to a political to a cultural perspective on innovation must be ascribed in part to changing social and political realities and not simply to new facts unearthed by the process of inquiry. The political and cultural perspectives are made more viable by the declining belief in technology and by less social consensus on goals. The perspectives rest more upon a professional consensus of what is possible and relevant and valued rather than upon a scientific consensus as to what is true. Professional consensus in turn rests heavily upon current perceptions of the total social and political milieu and in particular upon the actions of the government.

In this sense, the perspective is a weaker claim to knowledge than is Kuhn's scientific paradigm. The perspective is a "way of seeing" a problem

rather than a rigid set of rules and procedures. As such it is more permeable and open to change than is a paradigm. A scientific paradigm is closely defined by consensus of the relevant scientific community, whereas a professional community may hold several perspectives simultaneously. The same person may view innovation from one perspective, then from another for another purpose. The notion of a perspective better represents the status of our understanding regarding knowledge utilization processes than does the stronger notion of a scientific paradigm, and probably better represents the nature of our knowledge in the social sciences generally.

The Perspectives

For the past decade or so, studies on innovation have been dominated by three major perspectives. These perspectives have been the framework through which researchers, developers, and officials have understood the innovation process. These perspectives also provide the underlying framework for policy formulation. These perspectives are the technological, the political, and the cultural. (For a fuller review of the research, see House, 1979.)

Contemporary efforts at innovation in education go back at least to the launching of Sputnik and to attacks on the schools, particularly the progressive reforms and life adjustment curricula, by university critics. Curriculum reform efforts were launched in the name of scholarship and the national defense by such federal agencies as the National Science Foundation and by private agencies like the Ford Foundation.

In the beginning these efforts proceeded from professional and scholarly authority. University scholars in mathematics and the natural sciences, and eventually in the humanities and social sciences, produced new curriculum materials that better reflected the structure of the parent discipline. So

the new math included set theory, as well as attempts to teach "inductively" in accord with scientific thought processes. Professional groups like the Commission on College English tried to introduce new topics, like semantics, linguistics, and the new literary criticism, into the high school English curriculum.

These reforms were headed by university scholars who found their authority base in their discipline and who developed the new training materials in an intuitive manner bred of familiarity with their subject matter. The materials were disseminated through publication and through workshops held for public school teachers. The model was that of university teaching. Teachers were simply to be updated in content and method. During this time period, there was a considerable degree of consensus about the purpose of the schools and the authority of scholars.

By the mid-sixties this view of curriculum and innovation based on scholastic authority gave way to a more technological view of innovation. The scholastic approach had proceeded intuitively based on tacit knowledge. The technological perspective replaced the tacit basis of innovation with a more systematized and rationalized approach. The innovation process was conceived as separated into functions based on rational analysis and empirical research.

There were important models for this rationalization of the innovation process. Both modern industry and modern agriculture were highly successful. Space technology was occupying the front pages of newspapers. Technologized processes seemed to be related to progress. Progress was achieved by introducing new techniques into an area, and the process of modernization itself could be systematized, organized, and replicated. Whereas the scholastic innovation process had proceeded by tacit knowledge, technologizing innovation based it on explicit knowledge.

Both teaching and the innovation process were conceived as technologies. Teaching could be improved by the introduction of new techniques. The new emphasis was not so much on improving a teacher as on finding particular methods of instruction and materials that would enable the students to learn better. The improvements existed more in the methods and materials rather than in the teacher. The teachers would adopt the new techniques. Again, explicit and replicable techniques replaced the tacit knowledge of the teacher.

The innovation process itself was also conceived as a technology. Innovation was conceived as a research, development, diffusion, adoption paradigm --the "R, D, D" model. New knowledge would be produced by research, converted into usable form in development, spread to teachers during diffusion, and, finally, put into practice by teachers during the adoption stage. More than twenty federal educational research and development laboratories and centers were established with this model in mind. These organizations became the backbone of federal innovation effort. Some labs and centers created their own models of how they would convert knowledge into usable techniques. An early formulation of such a view was that of Clark and Guba (1965).

No sooner had the labs and centers been established than they began to have some difficulties. Although many materials were produced, many were not of high quality. Even those that were of high quality seldom demonstrated the dramatic learning results hoped for. Even worse, teachers were often reluctant to use the materials. Whereas the R, D, and D paradigm assumed a passive consumer at the end of the chain willing to adopt a new product, teachers were often unwilling or unable to do so. As it turned out, the teacher was constrained by a whole set of contextual considerations that prevented the wholesale adoption of new ideas. These contextual constraints in the school were more determinate of the teacher's behavior than were new techniques and external agencies.

In spite of such disappointments, the technological perspective continues strong today, and is by far the dominant of the three perspectives. For example, the current competency testing movement is derived from such a perspective. Learning is conceived as capable of being reduced to a set of tasks. These tasks can be identified as learning objectives and measured by test items. Teaching can be focused on these particular objectives, using techniques and materials that most efficiently achieve these tasks.

The process is analogous to a task analysis of a job in industry. The efficiency engineer analyzes the job into separate tasks, then times the performance of those tasks. This is called efficiency engineering or scientific management. What is significantly different about competency testing from previous technological approaches is that rewards and punishments are attached to successful performance of these tasks, a situation closer to that in industry.

What characterizes the technological perspective, however, is its way of formulating and addressing problems. Teaching and innovation are technologies (or should be). Solutions are techniques that are replicable and transferrable to other situations. Technological thinking--selecting the most efficient means to a given end--is the mode of rationality. Most innovation studies continue to explore and define issues from this perspective. A recent example is the attempt by Hall and Loucks (1977) to determine the level of implementation of an innovation. It is not likely that the technological perspective will disappear in such a technological society.

The second perspective is the political perspective. The attempts to innovate, and consequent efforts to evaluate these innovations, led to many studies of innovations. By the early seventies it seemed clear that many of the innovations were failing to be implemented, and it seemed reasonable to interpret the problems as principally political ones, particularly within the highly politicized social atmosphere arising from the Vietnamese war. In this

period, conflict began to seem as natural as common purpose and consensus had seemed earlier. During this time political accounts of innovation began to appear (House, 1974; Berman and McLaughlin, 1975; Greenwood, Mann and McLaughlin, 1975).

The political perspective views innovation as a matter of conflicts and compromises among factional groups. These groups may be teachers, administrators, parents, developers, governments, or individuals. For example, while the technological perspective would view researchers, developers, and practitioners as cooperating within a common value consensus, the political perspective would view each group as having its own goals and interests, which often conflict with the purposes of the others. Cooperation on an innovation is viewed as problematic rather than automatic. Cooperation must result from negotiation and compromise.

At the individual level the political view might be manifested in one person influencing another person. The influence might be exerted by persuasion, inducements, or coercion. Personal influence is often exerted through face-to-face contacts, and the opportunities for these tend to channel political efforts and events. At the school level the political analyst may see the school as comprised of subgroups of faculty and students. Often, in order for the innovation to succeed, an advocacy group must arise to support and promote the innovation. This, in turn, may give rise to a counter-group within the school. The progress of the innovation may be seen as factional groups competing and cooperating within the school (House, 1974).

The relationship between the school and school district may be viewed as efforts by the central staff to control the local schools and as efforts by the schools to resist this control in various ways. The central staff has control over hiring and budget, but the local school has grasp of everyday instructional processes. The politics of personality within this framework

are constant themes of both researchers and practitioners themselves. Events are often explained and interpreted as power struggles among individuals (MacDonald and Walker, 1976).

Factions may align themselves along vertical divisions within the district. Here parents and community are often involved. One alignment of administrators, backed by particular parents, may push for programs for gifted children. Another faction may oppose. These fights frequently come to rest in school board politics, if they are large enough. School-community conflicts can also be easily interpreted within the political perspective (Peterson, 1976).

Perhaps the most common use of the political perspective is to interpret the interaction among the local, state, and federal governments. The traditional political analysts concentrate on legislative and bureaucratic politics --the making of policy and progress of bills through legislatures. This has to do with special interest groups and the mechanisms of legislative process. More recently attention has been focused on the implementation of these educational programs. Accommodations between levels of government are being re-examined. Authority and power relationships are at issue (Wirt and Kirst, 1972 ; Burlingame, 1977).

Political analysis also is being applied to large-scale societal trends in two ways. First, the changing social trends are being assayed for their political drift and portents of the future. Is society becoming more conservative? Will much less money be available to run the schools? Will the courts continue to demand desegregation? Secondly, innovations are themselves being interpreted against the background of societal trends. Must curriculum reform be abandoned in the face of a return to basics? Or will curriculum efforts of the federal government be focused on matters essential to economic efficiency? What is the political nature of reform efforts themselves? (Cohen, 1979; Paulston, 1976.)

Finally, at the most abstract and global level, political analysts examine what role education plays in society as a whole. Does schooling reproduce the social class structure of the society? (Bourdieu and Passeron, 1977.) Does education serve to liberate or conserve? All these questions have profound implications for innovation efforts. Few were asked, or can be asked, from the technological perspective.

Since the early seventies, the political perspective has become a major competitor with the technological perspective. This is evident in the number of studies conducted and the frequency with which events are interpreted from this perspective. The technological perspective is still dominant, but this is partially determined by the federal government embracing this perspective, since most studies are funded by the federal government.

The third perspective is the cultural perspective. It is not a new orientation. It is at least as old as Jules Henry's 1963 analysis of the classroom ("School is an institution for drilling children in cultural orientations," p. 283) and probably much older. Yet it has been undergoing a revitalization and increasing its popularity greatly among researchers as an explanation of change (Smith and Geoffrey, 1968; Sarason, 1971; Smith, 1971; Wolcott, 1973; Lortie, 1975; Wolcott, 1977; Hill, 1979).

Initially, it was employed to study the effects of innovations, those effects often being diffuse and intangible. More recently it has been used to study the innovation process itself. Now it is being suggested indirectly as a model for the innovation process. That is, the different participants--teachers, developers, etc.--are seen as different cultures or subcultures. An innovation may be developed by a group of university scholars, and the innovation will reflect the norms and values of that culture. As it is disseminated to teachers, it enters a new culture with significantly different norms and values. It will be differently interpreted and used in the new culture.

Much early work in anthropology was devoted to studying the diffusion of innovations from one culture to another, e.g., the "cargo-cult" study. The cultural study often employs a different methodology, like participant observation, ethno-methodology, case study, etc., which concentrates heavily on how people interpret events. The social and cultural particularities become exceedingly important.

Hence, on a broad scale, the innovation process is conceived as the interaction of distinct and separate cultures. Conflicts and misunderstandings are interpreted as conflicts in values. Teacher culture is often seen as distinct from the other cultures; e.g., researchers, parents, technocrats, developers, who try to change it. Many of these studies show the subtle ways in which change efforts are absorbed without significant change occuring. Most studies are directed at the different "meanings" produced by the change efforts rather than at the change itself.

So far, most cultural researchers tend to be sympathetic to the recipient culture rather than to the innovators. though one may wonder whether this will remain so once the government begins sponsoring such studies. In some of these studies, formal anthropological concepts are employed. In others, more ordinary concepts and language are used. I would expect that there would be a rising concern with language, symbolic meanings, social exchange, shared values, cultural context, belief systems, and evolutionary change over the next several years.

An Expansion of the Cultural Perspective

Since the cultural perspective is less fully developed in the educational change literature than either the technological or cultural perspective, it is worth examining what cultural explanations of change might look like. My thesis is not that the cultural will supplant the technological and political

perspectives, but that societal developments will make the cultural view more relevant as an explanation. It will compete with the other two perspectives as an explanation for events.

Within anthropology there are at least two major traditions regarding cultural change--the cultural materialism tradition and the multiculturalism tradition. In explaining cultural change the cultural materialists distinguish between relativsim and evolution as explanatory modes. Cultural relativists see change within cultures as essentially divergent. Change sequences are explained by the particular tradition or history of the culture. "A distinctive pattern develops, it is said, and henceforth is the primary determinant of whether innovations are accepted" (Steward, 1955, p. 35). In this view the environment puts constraints on how the culture develops, and the origins of activities are pushed back in time, unexplained.

The other materialist view is the evolutionary one. It sees change occurring in distinct stages. It assumes that there are parallels of form and function in independent cultural traditions and that there is identical causality. It looks for recurrent patterns. In the 19th century anthropologists posited developmental stages for all independent cultures, but this view, known as "unilinear" evolution, has been discounted. "Universal" evolution conceptions try to average all the independent cultures together to arrive at common factors that characterize "culture" in general.

The third evolutionary viewpoint is that of multilinear evolution. This theory of cultural change assumes that there are limited parallels of form and function, and limited similarities of cultural sequence. A key idea is that of cultural ecology, the idea that adaptation to the environment enhances cultural change. Underlying the idea of ecology itself is the concept of community. Cultural ecology tries to account for the origin of <u>particular</u> cultural features by introducing the <u>local environment</u> as the extracultural factor (Steward, 1955).

Changes in the culture are slow and are attributable to "new adaptations required by changing technology and productive arrangements" (Steward, p. 38).

> The concept of cultural ecology, however, is less concerned with the origin and diffusion of technologies than with the fact that they may be used differently and entail different social arrangements in each environment. The environment is not only permissive or prohibitive with respect to these technologies, but special local features may require social adaptations which have far-reaching consequences. (Steward, 1955, p. 38).

In explaining cultural change, then, cultural diffusion is of secondary importance. The culture itself is the dominant force, the culture being ". . . learned modes of behavior that are socially transmitted from one generation to the next and from one society or individual to another" (Steward, 1955, p. 44). In studying such change, holistic ethnological approaches stress the normative and persistent qualities of the culture. The cultural materialist tradition of cultural change was dominant in anthropology for a few decades after the war and is now showing signs of resurgence as massive cultural shifts become apparent in response to the energy shortage. Is it relevant to education?

Some innovation theorists, such as Goodlad (1975, p. 205), have explicitly advocated the notion of school as an "ecological community in which both living and non-living things constitute a system and interact within it. In this conception, man is part of, not master or conqueror of, the environment. Things and sets of things, individuals and groups of people and the relationships among all these are seen as one, a unified whole. . . . All are part of the same systemic whole or ecosystem. Every person and every thing has consequence for all other persons and things" (Goodlad, p. 205). Goodlad explicitly rejects the notion of production as a metaphor for schooling in favor of the "ecosystem," the community, as metaphor.

In the Rand studies the notion of "mutual adaptation" can be understood as either a political or a cultural concept. To the degree that one emphasizes the "mutual" agreement idea--negotiation--the idea is political in import. And mutual congruence of interests between the federal and local governments is the way the Rand studies have been interpreted. But insofar as one emphasizes the adaptation of the innovation to its environment, its local context, the notion is cultural, and harbors ecological connotations.

The most straight-forward evolutionary approach, however, is that of Farrar, DeSanctis, and Cohen (1979) who explicitly see implementation as evolution. In explaining the implementation of the Experience-Based Career Education program, they reject the center-to-periphery (technological) and bi-lateral process (political) models and propose an evolutionary model. "Evolution nicely characterizes this process because the metaphor stress change. . . . Sometimes historical change will produce convergence within a district concerning a program, and sometimes it will produce the opposite" (Farrar et al., 1979, p. 50). The local environment is the dominant factor. "In any event, local forces are as important--usually more important--in the evolution of federal policies and programs as federal influences" (Farrar et al., p. 16).

Implementation, then, takes on many meanings within the local context. The loose, segmented nature of the school allows much more autonomous action on the part of teachers and administrators. The EBC program was subject to diverse influences resulting in "multilateral evolution." "The program ideas and its themes or potentialities are given new meaning as seemingly external events shift the focus of a teacher, a project, a school district, or a nation. . . . The notion of evolution captures the importance of change much better than implementation does" (Farrar et al., 1979, p. 50).

A second tradition of cultural change analysis is that of multiculturalism. Anthropologists have traditionally acted on the assumption that most societies are one culture. Recently, it has been proposed that the normal experience in any society is that of multiculturalism (Goodenough, 1978). Nations and societies are in fact comprised of subcultures. Increasingly, accounting for change entails recognizing the differences in these subcultures from which individuals learn their orientation. Learning a culture actually means learning a set of subcultures. To interact effectively in a subculture means developing multicultural competence, learning what to expect (Goodenough, 1979). Access to elite subcultures often becomes the focus of reform efforts.

Hill-Burnett (1978) studied the interaction of teachers and Puerto Rican students in a midwestern city by contrasting the professional teacher culture to the Puerto Rican student culture. She tried to loosen the stereotypes held by the teachers by offering cultural explanations of puzzling student behaviors to them. Ruddick (1977) has analyzed the dissemination of new curricula as an encounter of cultures, an encounter between the research culture and the culture of the receiving teachers. All these analyses see society and the educational community as comprised of subcultures. Multiculturism is the way of explaining change.

For example, Wolcott (1977) constructed an ethnography of a school implementing a planning, programming, and budgeting system and used anthropological concepts to explain events and interactions among groups. The innovators were portrayed as technocrats who belonged to a subculture that valued order and rational process. Information, rational planning, and the idea of progress were important. Exerting control, managing settings, and commanding knowledge were also highly valued by the technocrats, who were ends-oriented.

By contrast, the teachers, who were the recipients of the innovation, were means-oriented, and focused on their teaching. The teacher subculture

conceived teaching as traditional and sacrosanct and teachers as autonomous but vulnerable to outside pressures. It held that only teachers really understood teaching. The fate of the innovation was determined by the interaction between these two subcultures. Wolcott conceived the two subcultures together as constituting the educator culture and as being related by "complementarity," "reciprocity," "conceptual antithesis," and "rivalry." The interaction of the two subcultures gave the school the appearance of change without anything really changing since the plans of the technocrats were not put into effect by the teachers.

To Wolcott the anthropological analysis demonstrated the continuity and stability of the school in the face of efforts to change it, a good thing according to Wolcott. Although the interaction of the teachers and technocrats could have been interpreted from the technological perspective as a problem of implementation or from the political perspective as a conflict of interests, Wolcott chose to ask questions such as, "What purposes, values, and ideals do all the subgroups of educators hold in common?" His inquiry was directed "not to change, itself, but to the different meanings produced by the effort to impose change." Wolcott's is a prototypical study conducted from the cultural perspective, though most do not make such extensive use of anthropological concepts.

A Comparison of the Perspectives

The technological perspective has focused on the innovation itself, on its characteristics and component parts, on how to produce and introduce it. The technique and its effects are the focal points. The political perspective has focused on the innovation-in-context, on the relationships between sponsors and recipients, on rewards and costs and their distribution. Power and authority relationships are the focal points. The cultural perspective

has focused on the context, on how work is structured and life is lived, on how the innovation is interpreted and relationships disturbed. Meanings and values are the focal points.

So the shift has been from the innovation, to the innovation-in-context, to the context itself--from the technological to the political to the cultural perspective. Changes in research methodology have accompanied these shifts. The technological perspective usually conducts its investigations with psychometric instruments like achievement tests, attitude scales, or scaled questionnaires. The political perspective conducts its investigations primarily with semi-structured questionnnaires and interviews, a survey methodology. The cultural perspective lends itself to anthropological methods of investigation like observation, participant observation, and case study. However, the shift in perspectives precedes the shift in methodology. One uses a different methodology in order to ask different questions, and then the different answers confirm the methodology and perspective. In other words, each perspective is confirmed by its own methodology.

"Hard" data such as that produced by psychometric, sociometric, and econometric research procedures are readily aggregatable over large units in forms such as achievement test scores, social indicators, and cost benefit indices. Interview data are aggregatable and generalizable but with more difficulty. Ethnographic methods are suitable to small groups, to microcultures but are difficult to apply to national institutions. A holistic analysis or a natural history of an entire community lends itself to smaller units (Heighton and Heighton, 1978).

The same events will be seen differently from the three perspectives. For example, in their review of implementation studies, Fullan and Pomfret (1977) classified these studies into three main types: fidelity studies, in which fidelity to the original innovation is at issue; mutual adaptation

studies which focus on how the innovation has been changed in the implementation; and process studies, which focus on the implementation process itself. These three types of studies conform to implementation seen from the technological, political, and cultural perspectives respectively.

For example, from the technological perspective, Man: A Course of Study (MACOS) has been studied as to the degree of faithful implementation. Teachers have been tested for their knowledge of MACOS content, and students have been tested for conformity to MACOS principles (Cole, 1971). From the political perspective MACOS has been studied as to how local personnel adopt the materials to their own uses and how local factions promote and inhibit their use (Hill, 1978). From the cultural perspective, MACOS has been studied as encounters between the social science culture that produced the materials, the disseminating group culture, and the recipient group culture. The first culture is embodied in the materials themselves, the second in the workshop settings and procedures for dissemination, and the third in the institutions and values of the traditional curriculum. The interaction of the three cultures is treated as an acculturation process in which the three cultures develop a common tradition (Rudduck, 1977).

The three perspectives also differ significantly on the degree to which there is social consensus on interests and values. The earliest version of the technological perspective assumed there was considerable consensus in both interests and values. It assumed that everyone shared a common interest in advancing innovations and that everyone operated from a common frame of values. It reflected a society believing unabashedly in technological progress. The only problem was to find how best to achieve it. Technical reasoning (sometimes known as rational decision making) assumes that the goal is set and that the problem is to find the "best," i.e. most efficient, means to that end. Federal innovation and evaluation have been directed to that pursuit, e.g.,

planned variation approaches like Follow Through. The later technological perspective has begun to accept conflict, formerly a surprise, as the price of progress, as in competency testing.

The political perspective implies that all is not harmonious. There may be problems, conflicts of interests. Not everyone wants the same thing, or else everyone wants a greater piece of a scarce resource. Conflict is not only possible but probable. Opposing factions will have to bargain and compromise, resort to political devices. Still, the political perspective assumes that there is enough value consensus such that a compromise on interests can be achieved successfully. Even though people may not be in agreement on the content of what they want, at a minimum they agree on the procedures by which they can reach a peacful compromise and an allocation of scarce resources. In other words, the participants, however much their interests conflict, share an authority structure, a set of values.

The cultural perspective assumes a more fragmented society, more value consensus within groups and less consensus among social groups so that separate groups must be regarded as subcultures. The groups may be professional, ethnic, regional, etc. Separate parts of the system are seen as more different than alike. The belief system of each one is a significantly different entity. The analogy is with foreign cultures to which one does not belong. In other words, there is no agreement on values, no assumption of a shared value system. The cultural perspective is redolent of societal fragmentation. Not only do the separate groups not share values and a way of resolving conflicts, they cannot be certain what the other groups' values are. On the other hand, the cultural perspective views each particular group as having a unitary culture and value system internally.

The three perspectives also differ significantly in their ethics. From the technological perspective, it is all right to pursue innovation aggressively

since the idea of technical progress is shared by all, since the innovation proceeds from a common value framework, and since the innovation is in the common interest. In fact, the primary ethical problem is to discover the best means to the common end. The innovation, program, or policy that most efficiently leads to the common goal or maximizes the common end is the best one. There is a common, unquestioned base of authority and the ethics are authoritative (and often hierarchically institutionalized in government agencies).

From the political perspective, securing the cooperation of others is problematic. The innovation cannot be assume to be in their interests. For example, the innovation may require a substantial increase in the teacher's workload yet the teacher may not benefit from it. One way of proceeding is to get the other party to agree, to come to understandings with them, to secure their assent before innovating. The ethics are contractual.

From the cultural perspective, even common agreement is problematic since two different cultures may not understand one another, and there may be no mutually-accepted procedure for reaching agreement, nor common values on which to do so. The possibilities for misunderstanding and miscalculation are enormous. One must be greatly concerned about the possibility of the unanticipated effects of an innovation in an unknown culture. Action becomes difficult. One way of proceeding is to try cautiously to establish common ground between the two cultures. It is not clear what is right and wrong, good and bad. The ethics are relativistic. (See Figure 1 for a summary comparison of the perspectives.)

Relationships Among the Perspectives

In Figure 2 the three perspectives are related to one another. The technological perspective lies along the vertical dimension and differentiates teaching as a craft from teaching as a technology. The political perspective

Figure 1. Summary of Three Perspectives on Innovation

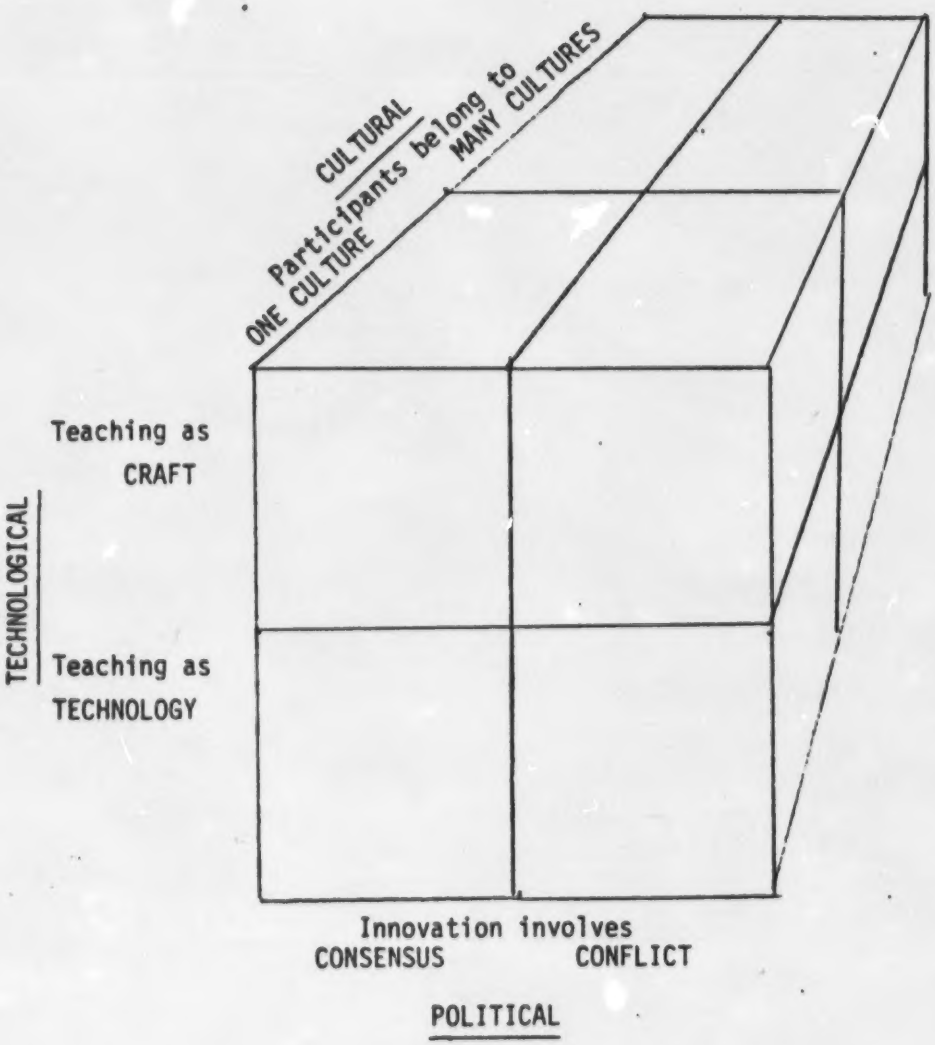
	Technological	Political	Cultural
Fundamental principles and assumptions	Systematic, rational processes Explicit knowledge and techniques are applicable (e.g., RDD model) Passive consumer Cooperation is automatic Efficiency and accountability are issues Common interests and values are assumed	Factional groups engage in conflict and compromise Influence is exerted by persuasion, inducements, coercion Power struggles dominate Cooperation is problematic Legitimacy is issue There are conflicts over interests	Participants are seen as cultures and subcultures Innovation requires the interaction of separate cultures Effects of innovation are diffuse and intangible Cooperation is enigmatic Changes have different "meanings" Autonomy is issue There may be conflicts over values and interests
Focal points	The innovation itself The technique and its effects	Innovation--in--context Power and authority relationships	Context Meanings and values
Values	Common value framework Goal is predetermined Find the one best way to accomplish the goal	Values are shared by all Consensus is possible after conflict negotiation of interests	Values are shared within small groups Values are different between groups and may be in conflict
Ethics	Ethics are authoritative Innovation is in the common interest Technological change should be pursued aggressively	Ethics are contractual Innovation is not necessarily in the best interests of individuals and groups Compromise differences	Ethics are relativistic Innovation may have unanticipated consequences Do not impose on other groups
Image	Production Product-oriented	Negotiation Conflict-oriented	Community Meaning-oriented

lies along the horizontal dimension and differentiates a consensus on interests from a conflict on interests. The cultural perspective lies on the third dimension and differentiates "one culture" from "many cultures." In other words, the emergence of the technological perspective was the perception of teaching not as a craft but as a technology. The emergence of the political perspective was the perception of innovation as involving not a consensus on interests but a conflict of interests. The emergence of the cultural perspective was perceiving of the innovation participants as belonging not to one culture but to many cultures. Each of these perceptions creates a new dimension.

The first distinction is whether one perceives teaching as craft or a technology. A craft is based on experience and tacit knowledge. It is learned through apprenticeship, perhaps under the tutelage of a master craftsman. A technology, like achievement testing, is based on principles and explicit knowledge. It is learned through formal instruction. Most teachers view teaching as a craft born of long experience, even to the point of believing that only teachers can really understand teaching. Most reformers view teaching as a technology that has a specifiable content and technique, if only we can discover what it is. The technological perspective became dominant when most researchers, developers, and government officials began to view teaching as a technology subject to improvement through technical innovation. This often put them in opposition to teachers who viewed teaching as a craft, subject to improvement only through helping and improving the craftsman.

The craft approach would view change as a slow process with control located within. The technological approach would see change as faster and as coming from outside. The base of consensual authority shifts from the craftsman to those who produce the tools and techniques. The teacher now becomes responsible only for implementing techniques others have decided upon.

Figure 2. Relationships Among the Perspectives



The first shift in authority was from the the craftsmen in the school to the academics in the universities who presumably had superior subject knowledge. This was stimulated by considerations of international competition, particularly Sputnik. The early curriculum development projects were conducted by academics reforming the content of the curriculum material.

The next shift in authority came in seeing teaching as a technology. The later curriculum development projects tried to produce "teacher-proof" materials. The authority for innovation shifted to those who sponsored and developed these techniques, mostly the government and quasi-government agencies. Before, in the pre-innovation period, the content was controlled by text-book manufacturers and the teaching methods by the teachers. Now, at least hypothetically, the developers were in control. In actual fact, the teachers passively resisted many of their innovations.

By the early seventies some people operating from the technological perspective reasoned that it was not enough to develop technology; teachers would have to be induced or coerced into using it. They reasoned that the teacher's interests might be in conflict with those of developers. Accountability schemes which linked student and teacher performance to incentives became popular. Other people, still seeing teaching as a craft rather than as a technology, saw the class, racial, and factional differences in education as necessarily being in conflict. They viewed the politics of innovation as negotiation, compromise, and bargaining amount countervailing interests like innovators, teachers, parents, etc. Different groups had different career patterns, different interests. The full-scale political perspective emerged as many analysts interpreted attempts at educational innovation as conflicts over interests.

Meanwhile, the innovation establishment had tended to become centralized (Boyd, 1979; van Geel, 1979). This exacerbated the differences between the innovators and regions and groups. Strong regional sentiments arose. Many

early activities had assumed that all participants shared a common value base if not a common interest. Even where a conflict of interest existed, it was often assumed that the participants shared values. Group and regional differences suggested to some analysts that there were not only conflicts of interests but conflicts of values. Participants had different belief systems and perhaps belonged to different subcultures. The cultural perspective was adopted which saw different cultural entities, particularly regional and local cultures and teachers as separate subcultures. There was a resurgence of localism.

For those who saw teaching as a craft but a separate culture, strategies for innovation like teacher centers allowed for evolutionary change within the teacher culture. At the same time, those who saw teaching as a technology could still pursue culturally divergent technological strategies, e.g, locally-developed behavioral objectives and locally-based accountability schemes. Decentralized technology had long been taught in colleges of education, e.g., behavioral objectives and standardized achievement testing.

The cultural perspective implicitly harbors a more conservative, traditional view of change. In anthropology change is explained by concepts such as cultural ecology, environmental adaptation, and multilinear evolution. Conflict between cultures is difficult to resolve short of resort to power by the stronger one and probably requires the development of a common understanding and tradition among them. Such a cultural adaptation might be expected to take a long time, and deliberate strategies for change among conflicting cultures are not yet clear. If the theories cannot explain innovation, perhaps they can explain the lack of it.

Chronologically, the technological perspective has held sway for the past two decades, only to be challenged within the past five years by the political perspective as an explanatory framework. Why this is so, I believe, is related

to trends in the society as a whole. Similar shifts in perception are occurring in other disciplines as normally technological in orientation as economics and organizational theory (Simon, 1978; Whyte, 1979).

Yet I do not expect the emerging analytic perspectives to fully supplant the dominant technological perspective the way Newtonian physics replaced earlier physics. The disappearance of the technological perspective would presage a change in the very nature and identity of Western civilization. While significant societal change is occurring, and accounts in a real sense for the increasing salience of other perspectives, I do not expect such change to be as profound or as rapid as to extinguish the technological mentality.

What I would expect is for the technological perspective to be blended with other perspectives, such as in the ways suggested in Figure 2. The urge to introduce technical innovations into the school will continue but will take more cognizance of political and cultural realities it has often studiously neglected. More radical innovators will attempt purer political or culturally-derived policies, but these attempts will be fewer and perceived as unusual. Mixed strategies will predominate.

This emphasizes the difference between paradigms in the physical sciences, where the physical world remains relatively constant, and the social world, where the reality itself changes. In the physical world one may test an Einsteinian conception of the world against a Newtonian one to see which better fits the facts. In the social world the facts themselves may have changed during the testing. It may make more sense to speak of the saliency of various perspectives rather than their ultimate truth or falsity.

The Perspectives and Modernization

Whatever the particular perspective, the very notion of innovation is tied to the idea of modernization. It is assumed that things should change,

that innovation means progress. The process of modernization promises both better material conditions and more individual fulfillment. In particular, modernization is a shift from an unquestioned reality, which is given by tradition, to a social situation in which everything can be questioned and changed. It is a shift from "givenness" to "choice" (Berger, 1974). In the modern view, things can be chosen in industry, in agriculture, and in education.

Although all three perspectives operate within the milieu of modernity, each has a different view of the desirability and direction of the modernization process. The most favorable view of modernization, of course, is from the technological perspective. Once it is assumed that there is a consensus on values and interests, particularly on the goal of technical progress, the major problem is to find the best means to the given end, a technical problem.

Given an agreed-upon end, such as raising test scores, a researcher armed with appropriate research methodologies can determine the "best" innovation. Since both the end and the method for determining the means is agreed upon, the advocate/policy maker can proceed with considerable certainty. One is reassured that all participants benefit.

Policies originating from a technological perspective tend to be product- or goal-oriented, and evaluation conducted from such a perspective looks for success in implementation or outcome from the developer's point of view. Research tends to be "objectivistic," that is, it conceives the world as consisting of basic uninterpreted "hard" facts against which empirical claims can be legitimized.

By contrast, the cultural perspective is far more cautious about modernization. It is "meaning-oriented" rather than product-oriented. It sees individual meaning as collectively derived. Each person has a framework of meaning, and each person has the right to live in a "meaningful" world. Others must respect this private world. By transforming meanings, modernization is

sometimes a threat to individuals and to cultures, according to the cultural perspective.

For both ethical and practical reasons, policies originating from the cultural perspective tend to respect the values and meanings of the people and cultures involved. "Policies that ignore indigenous definitions of a situation are prone to fail" (Berger, 1974). Evaluation derived from the cultural perspective seeks inside information and respects indigenous definitions and values. It tries to define how people see things from within. Action originated from the cultural perspective is somewhat tentative and uncertain since one cannot always predict all the consequences of the action.

The political perspective is intermediate in its certainty of action. The primary concern is with people's interests, their capacity for getting what they want. The action must be legitimate. In democratic societies this means that everyone's interests must somehow be taken into account. Evaluation is aimed at ascertaining how people's interests are affected by the innovation process. Political research studies the manner in which various factions contend with one another. Politically-oriented policies must consider the interests of the contending groups. In this perspective, modernization occurs through legitimate political institutions mediating conflicting interests.

The culture of the school itself is a very traditional one, at least compared to other sectors of society such as industry. It is not surprising that schools would resist modernization pressures, particularly when these are originated from without. Nor is it surprising that the school, being traditional, will be slow to change without pressures. How modernization should occur, through what legitimate means and how fast, are the issues that divide people concerned about innovation.

As I have tried to indicate, however, it is not only events in education that make the political and cultural perspectives more salient as interpretive

frameworks. Our perception of trends in the larger society greatly influences how we interpret events in microcosms of society like educational innovation. Within society as a whole, the process of modernization has been undergoing a significant transformation. Modernization processes such as economic development and mass communication, once thought to be primary forces for social integration, now seem to be leading to social fragmentation.

Contrary to expectations, in many parts of the world, there has been a rising disenchantment with modernization and a re-emphasis on ethnic identity leading to a "politics or disassociation" and demands for ethnic, cultural, political, and even economic sovereignity (Said and Simmons, 1976). This renewed vitality of ethnic identity has been based on primordial ties of blood, race, language, religion, and custom. Iran is the quintessential example. Intensified ethnic identification has led to socio-political differentiation and to demands for cultural autonomy. Conflicts among groups abound. Under these circumstances, appeals to the national interest carry little weight.

Generally, the rise in ethnicity is attributed to mass communications that permit ethnic groups to become visible and differentiate themselves from other groups. Modernization scholars, imbued with a notion of rational and linear progress, have usually treated ethnicity as a transitional stage in which individuals will come eventually to identify with the higher national group (Said and Simmons, 1976). This thesis looks more dubious today. Even a cursory examiniation of educational innovation in the United States and other countries reveals that the origin and fate of innovations are significantly shaped by ethnic forces.

Parallel to the persistence of ethnicity as a social force is a "neo-ethnic" response to the depersonalization and rationalization of post-industrial society. This is a transition from an acquired national consciousness to

communal forms of identity, to a search for community in modern society. The quest for community is a search for cultural purpose, membership, status, and continuity.

While ethnic identity is rooted in presumptions of common origins based on ascriptive characteristics, neoethnic behavior is rooted in the quest for identity to replace earlier ethnic forms. This results in subcultures based on work, occupations, common functions, and alternative forms of community. Social conflict arises when there is competition among these ethnic and neo-ethnic groups for socially available rewards. One could, for example, interpret the great conflict over school decentralization between New York City teachers and blacks in this fasion, or the yet-to-come conflict over bilingual-bicultural programs.

All of these trends weaken the power of the state and the idea of modernization on which the modern state is based. Group identity is strengthened at the expense of national unity. State action in the name of technological progress becomes much more problematic. At the same time ethnic and neo-ethnic groups mobilize to press their demands on the government, which is expected somehow to meet demands from all groups. Groups are politically mobilized by entrepeneurs who lead the groups through self-awareness and identity, to awareness of group needs, to an articulation of group demands (Mowlana and Robinson, 1976). Under such circumstances the political and cultural perspectives become much more salient as explanatory frameworks for innovation in education, as well as for a host of other social phenomena.

Implications for Research and Policy

A common view of social research is that its purpose is to clarify goals and to provide evidence for choosing alternative means to given ends. It is

assumed that there is broad agreement on the goals of social policy and a separation of the determination of ends from the determination of means (Cohen and Garet, 1976). But this conception of research and policy analysis is derived from a technological perspective.

Cohen and Garet (1975) contend that social policy is a system of knowledge and belief. "A policy, then, might be described as a grand story; a large and loose set of ideas about how the society works, why it goes wrong and how it can be set right." Social research influences broad assumptions and beliefs, "the policy climate," rather than particular decisions about programs. The social research itself is held together by larger ideas and assumptions not empirical in nature. It is a thesis of this paper that a significant part of the underlying beliefs and assumptions are the fundamental perspectives. The perspectives provide explanations in terms of regular and predictable conceptual categories, suggest what evidence is considered relevant, and what factors determine events. They provide answers to the questions of "What happend? Why did it happen? What will happen?" (Allison, 1971). Different perspectives produce different explanations and different policies.

Yet the relationship between research, policy, and the analytic perspectives is not a determinant one. The perspectives suggest explanations and factors for review rather than totally determine them. Many different policies and research studies can be drawn from the same perspective. Nor is the influence all one way. The research conducted and the policies implemented affect the perspectives one holds, both in the detailed nature of one's explanation and especially in the number of people interpreting an event from a particular framework.

It follows from this that research is extremely important in setting the policy climate generally, and in influencing how people view events connected with innovation. If research studies are all conducted from the technological

perspective, as they were for years, then most people will harbor such a view of innovation, thereby disregarding the factors implicit in the political and cultural perspectives. One might expect innovation policy to be similarly technological in concept, in spite of failures.

One might also expect somewhat different action strategies to be derived from the three perspectives. A technolgical strategy might concentrate on the development of an innovation and its proper employment in the school. An effective innovation and proper skills to implement it might be the focus. A political strategy might focus on the interests of the participating groups, anticipating that the ultimate success of the innovation would reside in how motivated people were to employ it. A cultural strategy might take cognizance of the values of the teachers and consider how congruent the innovation was with the school culture. Factors identified by the analysts would become matters of concern for the strategist. A truly comprehensive strategy would view the situation from all three perspectives.

A technological strategy might spend large sums of money on developing an innovation so technologically sound that it would be far better than current approaches. A political strategy might focus on negotiating a mutual agreement with the participants as to who would do what and as to how the cost and rewards would be distributed. A cultural strategy might find long-term ways of changing the teacher culture, such as by training the teachers to do research on their own classrooms. As examples of the technological strategy one might cite the development of "teacher-proof" materials and competency testing. As an example of the political strategy, one might cite mandated parent participation in government programs. As an example of a cultural strategy, one might cite teacher centers. But one cannot adopt a particular strategy unless the professional community and government leaders understand matters from the appropriate perspective.

The companion reviews of the literature in this volume indicate the character of past research. Miles's review of the generic properties of the school is fundamentally technological in approach. Sieber's review of incentives and disincentives for knowledge utilization uses research generated from all three perspectives, but again the mass of the literature is technological in origin. This is even more so of Louis's review of external change agents. Almost all the studies reviewed have been conceived within a center-periphery notion of change. Fullan's review of internal human agents contains more literature generated from the other perspectives. Some political and cultural work has been done on the internal workings of the district. Finally, Berman's paper reflects the shift away from the adoption-technological concept of innovation towards the implementation-political/cultural viewpoints. However, the great mass of research literature remains so overwhelmingly technological in orientation that any review of it must reflect that weight. Our research is shaped by our fundamental perspective, and our perspective is limited by our research.

The three perspectives are pure types into which no individual researcher, theorist, or policy maker fits perfectly. As indicated in Figure 2, the three perspectives can be represented as different dimensions in three dimensional space. A particular position could be located anywhere within the three-dimensional space, the three dimensions being independent but not exclusive of one another. For example, an evaluation study might simultaneously try to ascertain how the interests of various groups are affected by an innovation (a political position) and expend an equal effort in defining the indigenous values and meanings of the participating groups (a cultural position). However, it would seem that most studies are recognizable as predominantly based on one perspective or another.

Why these perspectives rather than others? The answer is not altogether clear. One might say that the technological perspective represents the interests

of those who sponsor innovation; the cultural perspective, the interests of those who are "being innovated," and the political perspective the negotiation of those interests. But that analysis itself is conducted from a political perspective. It is significant that the three perspectives reflect the viewpoints of dominant societal institutions. These viewpoints have already been institutionalized within the academic disciplines such as economics, engineering (technological), political science and sociology (political), and anthropology (cultural). There is seldom represented the viewpoint of the weaker societal institutions, such as religion.

Can one of these perspectives be "proved correct" the way a scientific theory can? It would not seem so. Each perspective focuses on different aspects of reality, and, in fact, values the same aspects differently. There is widespread belief now that the exclusively technological perspective employed last decade in the form of the research, development, diffusion paradigm of innovation was not very workable, but that seems to be a matter of professional consensus and belief. In other times and other places, such as in agriculture in the '40s and '50s, the R, D, and D paradigm seemed to "work." In education the technological perspective has become less relevant and less workable, rather than incorrect. A critical difference between physical phenomena and social phenomena is that the latter change with time and do not provide a permanent base against which to test a theory or a perspective. Hence, perspectives are inherently less stable and change with social conditions. The more that teachers or the third world countries resist modernization, the more the political or cultural perspectives provide interpretations of on-going changing events.

What can government funders do, given that perspectives cannot be proved to be correct or incorrect? In a pluralistic society it seems sensible to fund all legitimate points of view. The government can sponsor studies that

examine knowledge utilization from the technological, political, and cultural perspectives. In the past, government funding has gone overwhelmingly into studies and projects conducted from the technological perspective. Somewhat better balance in funding is called for. To a considerable degree government-funded studies can affect how people view knowledge utilization.

Researchers themselves seem to lend themselves to one perspective or the other. Perhaps an awareness that there are other legitimate perspectives is all that is required, an acknowledgement that there are other ways of viewing a situation. It might also be useful for researchers to think about knowledge utilization from the other perspectives, just as a thought experiment to suggest other possibilities to themselves. Some research is already conducted from a combination of perspectives.

The problem for policy makers is somewhat more difficult. Policy decisions must often be taken which conflict with the other two perspectives. Perhaps the best that can be hoped for is that the policy makers inform themselves about the decision situation by analyses drawn from different perspectives. It would seem that the worst policy decisions are taken without regard for other points of view, the policy maker being falsely assured by the security of his unitary point of view that he has captured the significant aspects of social reality.

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